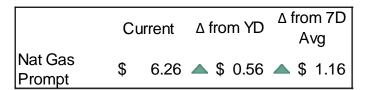


### **Market Report**

#### 28 September 2021



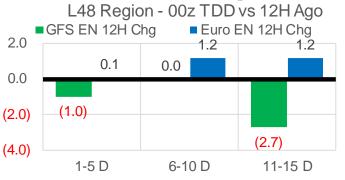
	С	urrent Δ from YD				Δ from 7D Avg		
WTI Prompt	\$	76.28		\$	0.83	<b>\$</b>	2.9	

	_	urrent	Λ fro	m VD	Δ from 7D		
	C	urreni	ΔΙΙ	Avg			
Brent Prompt	\$	80.11	<b>\$</b>	0.58	<b>\$</b>	2.7	

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Regional S/D Models Storage Projection
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Nat Gas Options Volume and Open Interest
Nat Gas Futures Open Interest
Price Summary

#### Vs. 12H Ago



#### Vs. 24H Ago



Current		Δ from YD	Δ from 7D Avg		
US Dry Production	91.7	<b>▼</b> -1.73	<b>▼</b> -1.02		

		Current	Δf	rom YD		Δ from 7D Avg		
US Po Burns	ower	30.7	•	-0.24	_	0.45		

	Current	Δ from YD	Δ from 7D Avg		
US ResComm	7.9	<b>0.41</b>	<b>-</b> 0.75		

	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.6	▼ -0.11	<b>a</b> 0.03

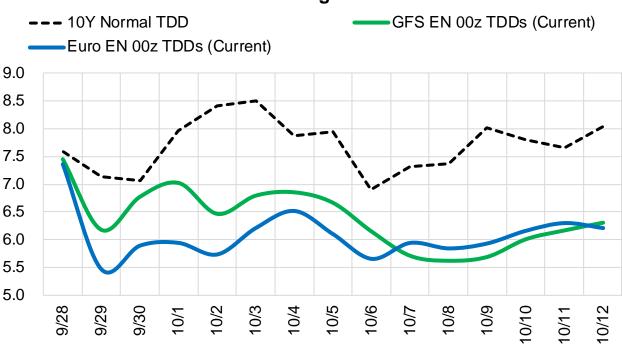
	Current		Δ from 7D Avg		
Net LNG Exports	10.2	<b>0.26</b>	<b>-</b> 0.04		

	Current	Δ from	YD	Δ from 7D Avg		
Mexican Exports	6.7	<b>a</b> 0.7	16		0.05	

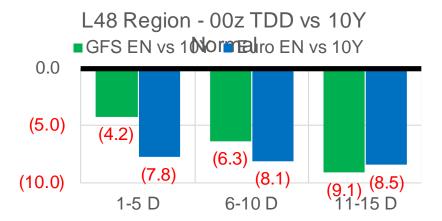


#### Short-term Weather Model Outlooks (00z)

#### L48 Region



#### Vs. 10Y Normal



Source: WSI, Bloomberg



## **Market Report**

#### Lower 48 Component Models

#### **Daily Balances**

	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	DoD	vs.7D
Lower 48 Dry Production	91.9	92.5	92.5	92.9	93.1	93.4	91.7	▼-1.7	▼-1.0
Canadian Imports	5.5	5.6	5.7	5.6	5.6	5.7	5.6	▼-0.1	▼ 0.0
L48 Power	32.3	30.3	29.1	27.7	28.0	30.9	30.7	▼-0.2	<b>1.0</b>
L48 Residential & Commercial	9.5	10.2	8.9	8.8	7.6	7.5	7.9	<b>0.4</b>	▼ -0.8
L48 Industrial	20.5	20.7	20.9	20.9	20.7	20.6	20.3	▼-0.3	<b>-</b> 0.4
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.1	▼-0.1	▼ -0.1
L48 Pipeline Distribution	2.1	2.1	1.9	1.9	1.8	2.0	2.0	<b>0.0</b>	<b>0.0</b>
L48 Regional Gas Consumption	69.5	68.4	65.8	64.3	63.2	66.2	66.0	▼-0.2	▼ -0.3
Net LNG Delivered	10.24	9.47	10.60	10.80	10.48	9.89	10.15	<b>0.3</b>	▼ -0.1
Total Mexican Exports	7.1	6.8	6.6	6.3	6.3	6.6	6.7	<b>0.2</b>	<b>▲ 0.1</b>
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	10.6	13.4	15.2	17.0	18.7	16.5	14.5		

#### **EIA Storage Week Balances**

	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	WoW	vs. 4W
Lower 48 Dry Production	92.4	93.0	90.8	91.1	91.6	92.7	<b>1.1</b>	<b>1.0</b>
Canadian Imports	5.0	5.3	5.0	4.8	5.2	5.2	▲ 0.0	<b>▲ 0.1</b>
L48 Power	39.7	41.9	38.1	33.7	35.0	33.2	<b>▼</b> -1.8	<b>▼</b> -4.0
L48 Residential & Commercial	7.6	7.8	7.5	7.1	7.3	8.2	<b>0.9</b>	<b>a</b> 0.8
L48 Industrial	20.9	20.9	18.9	19.5	20.9	20.5	▼ -0.5	<b>0.4</b>
L48 Lease and Plant Fuel	5.1	5.1	5.0	5.0	5.0	5.1	<b>0.1</b>	<b>0.1</b>
L48 Pipeline Distribution	2.3	2.4	2.2	2.1	2.2	2.1	▼ 0.0	<b>▼</b> -0.1
L48 Regional Gas Consumption	75.6	78.2	71.6	67.4	70.4	69.0	▼-1.4	▼ -2.9
Net LNG Exports	10.9	10.6	10.5	11.0	10.2	9.9	▼ -0.3	▼-0.6
Total Mexican Exports	6.8	6.8	7.0	6.7	6.6	6.8	<b>▲</b> 0.2	▲ 0.0
Implied Daily Storage Activity	4.2	2.8	6.7	10.9	9.5	12.1	2.6	
EIA Reported Daily Storage Activity	4.1	2.9	7.4	11.9	10.9			
Daily Model Error	0.1	-0.1	-0.8	-1.0	-1.3			

Monthly Balances									
•	2Yr Ago	LY					MTD		
	Sep-19	Sep-20	May-21	Jun-21	Jul-21	Aug-21	Sep-21	MoM	vs. LY
Lower 48 Dry Production	94.4	89.1	93.1	93.4	92.4	92.2	91.9	▼-0.3	<b>2.8</b>
Canadian Imports	4.7	3.8	4.5	4.8	5.2	5.1	5.1	▼ 0.0	<b>1.3</b>
L48 Power	36.3	34.4	26.8	35.9	39.6	40.2	33.1	▼ -7.1	<b>▼</b> -1.3
L48 Residential & Commercial	8.2	8.8	12.8	8.9	8.6	7.7	7.6	▼ -0.1	<b>▼</b> -1.2
L48 Industrial	22.5	20.3	20.8	20.6	19.6	20.1	20.2	<b>0.1</b>	<b>▼</b> -0.1
L48 Lease and Plant Fuel	5.1	4.9	5.1	5.1	5.1	5.1	5.1	▼ 0.0	<b>0.2</b>
L48 Pipeline Distribution	2.2	2.2	2.1	2.2	2.3	2.3	2.1	▼ -0.2	<b>▼</b> -0.1
L48 Regional Gas Consumption	74.5	70.6	67.6	72.7	75.1	75.4	68.1	▼ -7.3	▼-2.5
Net LNG Exports	6.2	5.9	10.8	10.2	10.8	10.5	10.4	▼ -0.1	<b>4.4</b>
Total Mexican Exports	5.3	6.1	6.8	7.4	7.1	6.9	6.7	▼ -0.2	<b>0.6</b>
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	13.2	10.2	12.4	8.0	4.6	4.5	11.8		



## **Daily** Average Generation Data

#### **Nuclear Generation Daily Average - GWh (NRC)**

	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	DoD	vs. 7D
NRC Nuclear Daily Output	85.8	86.2	86.6	86.5	86.5	86.5	86.5	0.0	0.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	19.0	18.7	18.3	18.4	18.4	18.4	18.4	0.0	-0.1
NRC % Nuclear Cap Utilization	87.3	87.6	88.1	88.0	87.9	87.9	87.9	0.0	0.1

#### Wind Generation Daily Average - MWh (EIA)

	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	DoD	vs. 7D
CALI Wind	1687	681	1454	1560	828	1682	3242	1560	1926
TEXAS Wind	14461	15903	5860	11025	10189	7123	11806	4683	1046
US Wind	57480	49488	33230	44897	45990	34443	53202	18759	8948

#### **Generation Daily Average - MWh (EIA)**

	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	DoD	vs. 7D
US Wind	57480	49488	33230	44897	45990	34443	53202	18759	8948
US Solar	12291	10389	12552	11856	12102	13123	12234	-889	182
US Petroleum	3067	2632	2491	2171	1711	1835	2017	182	-301
US Other	8916	8667	8885	8467	8344	8173	7503	-669	-1072
US Coal	109686	109937	107259	96633	91842	90534	83925	-6609	-17057
US Nuke	88637	89207	89642	89850	89617	89000	88851	-150	-475
US Hydro	25578	26636	26671	26711	27103	24960	23414	-1546	-2862
US Gas	176817	173146	171981	154958	143514	135201	129556	-5645	-29714

See National Wind and Nuclear daily charts



## **Storage Week** Average Generation Data

	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	92.4	91.9	90.2	90.3	86.7	85.9	-0.8	0.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	12.5	12.9	14.7	14.6	18.2	19.0	0.8	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

#### Wind Generation Weekly Average - MWh (EIA)

	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	WoW	WoW Bcf/d Impact
CALI Wind	3210	2052	2247	1236	2083	1936	-148	0.0
TEXAS Wind	7171	12600	7534	7327	9541	9780	239	0.0
US Wind	29243	41912	35441	30659	42355	43173	819	-0.1
					11695.5			
					38%			

#### **Generation Weekly Average - MWh (EIA)**

								WoW
	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	WoW	Bcf/d
								Impact
US Wind	29243	41912	35441	30659	42355	43173	819	-0.1
US Solar	12828	14536	13410	14316	14116	12005	-2111	0.4
US Petroleum	4466	5323	3135	2072	2470	2594	124	0.0
US Other	10104	10131	9766	8934	9277	9009	-269	0.0
US Coal	138055	136177	136318	116993	115066	109063	-6003	1.1
US Nuke	95157	94358	92365	93162	89489	88789	-701	0.1
US Hydro	28988	30621	28181	26944	24140	25334	1194	-0.2
US Gas	212121	216025	205503	181094	182107	174820	-7287	1.3

See National Wind and Nuclear daily charts



## **Monthly** Average Generation Data

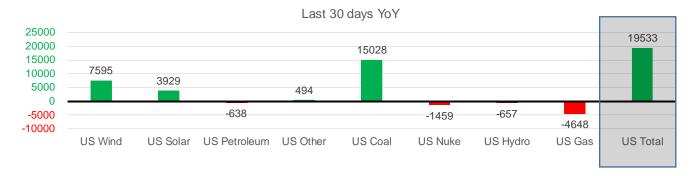
Nuclear Generation Monthly	Average -	GWh (NI	RC)						
	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	89.5	89.0	88.7	90.1	91.5	87.5	87.6	-4.0	-1.4
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	15.3	15.9	16.2	14.8	13.4	17.4	17.3	4.0	1.4
NRC % Nuclear Cap Utilization	91.0	90.5	90.2	91.6	93.0	88.9	89.1	-4.1	-1.4

#### Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	2228	1503	2881	2338	2442	1984	2039	-457	536
TEXAS Wind	7963	7312	9509	7217	9901	9363	9063	-538	1751
US Wind	32156	32193	36864	29217	35830	40767	39788	4938	7595

#### **Generation Monthly Average - MWh (EIA)**

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	32156	32193	36864	29217	35830	40767	39788	▼ -979.7	<b>7595</b>
US Solar	8216	9280	14577	14195	13846	13296	13209	▼ -87.7	<b>3929</b>
US Petroleum	4348	2943	4155	4233	4484	2292	2305	<b>13</b>	<b>▼</b> -638
US Other	8073	8449	8205	9327	9929	8841	8943	<b>101</b>	<b>494</b>
US Coal	115655	96921	122034	137228	137655	109705	111949	<b>2245</b>	<b>15028</b>
US Nuke	96160	91953	92180	92911	94062	90383	90494	<b>111</b>	<b>▼</b> -1459
US Hydro	26893	26300	32566	29941	28532	25518	25642	<b>124</b>	<b>▼</b> -657
US Gas US Total	190653 483806	178912 447088	189395 500268	207823 524889	210824 534996	171178 462052	174263 466622	▲ 1528 ▲ 4035	▼ -4648 ▲ 19533



See National Wind and Nuclear daily charts



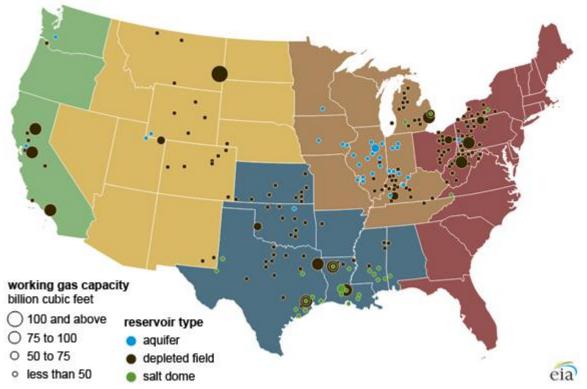
#### Regional S/D Models Storage Projection

Week Ending 24-Sep

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	11.8	1.3	13.1	92
East	3.1	0.7	3.7	26
Midwest	5.2	-0.7	4.5	31
Mountain	3.8	-3.6	0.3	2
South Central	-1.0	5.3	4.3	30
Pacific	0.7	-0.4	0.3	2

<sup>\*</sup>Adjustment Factor is calcuated based on historical regional deltas

#### U.S. underground natural gas storage facilities by type (July 2015)



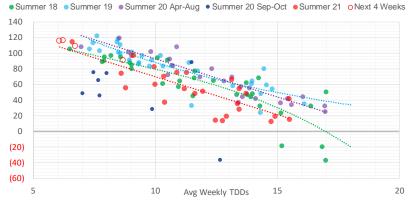


#### Weather Model Storage Projection

# Next report and beyond

Week Ending	GWDDs	Week Storage Projection
24-Sep	8.7	92
01-Oct	6.1	116
08-Oct	6.2	116
15-Oct	6.7	109

#### Weather Storage Model - Next 4 Week Forecast



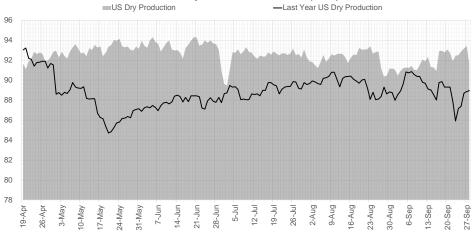
Go to larger image



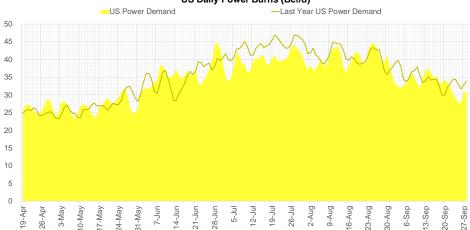


#### Supply - Demand Trends

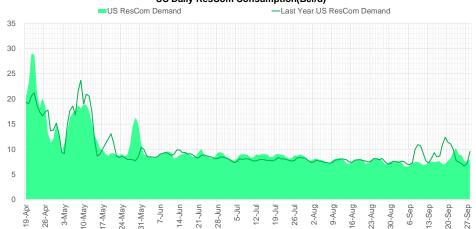
#### US Dry Natural Gas Production (Bcf/d)



#### US Daily Power Burns (Bcf/d)



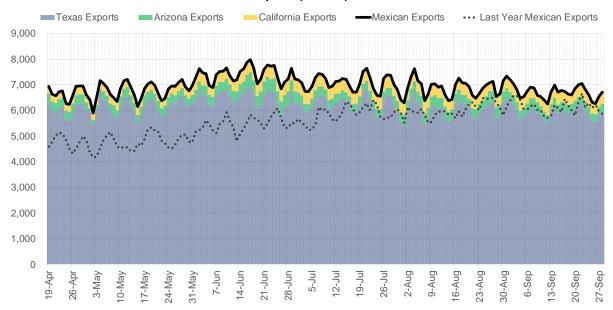
#### US Daily ResCom Consumption(Bcf/d)



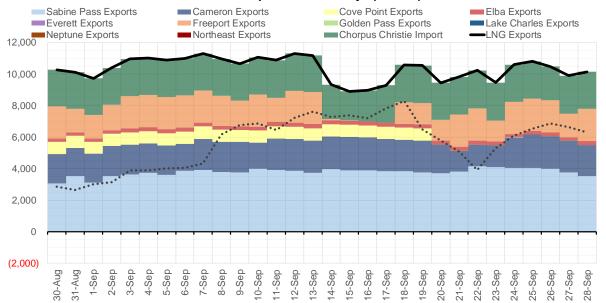
Source: Bloomberg



#### Mexican Exports (MMcf/d)







Source: Bloomberg



## Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

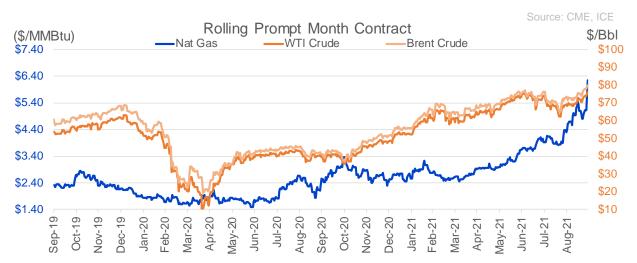
						_			
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL		CONTRACT MONTH		DIT/CALL	DIT/CALL STDIKE
11	2021	Р	5.00	10506		10	10 2021	10 2021 C	10 2021 C 5.00
11	2021	Р	4.50	9239		10			
11	2021	P	5.25	7231		12			
11	2021	P	4.45	6910		10			
11	2021	C	6.50	4258		10			
11	2021	C	6.00	4224		10			
10	2021	C	5.50	4164		12			
10		P				10			
	2021	P	4.00	3031		10			
11	2021		4.75	3010		10			
10	2021	С	5.75	2886		11			
3	2022	С	9.00	2776		10			
10	2021	С	5.60	2594					
10	2021	С	5.70	2543		10			
11	2021	С	7.00	2454		10			
11	2021	Р	4.25	2416		10			
10	2021	Р	5.50	2382		10			
12	2021	С	6.00	2273		3			
3	2022	C	10.00	2269		12			
11	2021	Č	5.50	2111		3	3 2022		
12	2021	P	4.00	2093		11	11 2021		
2	2021	C		2055		10	10 2021	10 2021 P	10 2021 P 4.25
			10.00			11	11 2021	11 2021 C	11 2021 C 4.00
12	2021	P	4.75	1959		12	12 2021	12 2021 P	12 2021 P 4.00
10	2021	С	5.55	1953		12			
12	2021	Р	4.50	1905		11			
12	2021	Р	4.25	1805		10			
12	2021	С	7.00	1677		10			
2	2022	Р	3.75	1623		11			
10	2021	С	5.65	1618		3			
11	2021	Ċ	5.60	1543					
4	2022	Č	6.00	1460		3			
1	2022	C	8.00	1439		10			
1	2022	C		1402		4			
			10.00			10			
2	2022	С	6.00	1401		11			
10	2021	P	5.45	1388		10			
4	2022	С	8.00	1350		2	2 2022		
11	2021	С	6.75	1291		1			
11	2021	С	6.25	1258		1	1 2022	1 2022 P	1 2022 P 3.50
12	2021	Р	4.15	1231		10	10 2021	10 2021 P	10 2021 P 3.25
11	2021	С	5.75	1096		2			
2	2022	С	8.00	1085	2		2022		
12	2021	Р	5.50	1060	10		2021		
10	2021	С	5.80	1054	3		2022		
2	2022	Č	9.00	1051	3		2022		
2	2022	Ċ	7.50	1049	3 11		2022		
11	2022	C	4.00	1049					
		P			12		2021		
11	2021		5.50	909	3		2022		
12	2021	P	3.85	907	2		2022		
12	2021	С	10.00	899	10		2021		
11	2021	С	10.00	884	11		2021	2021 C	2021 C 4.5
		Č			'	•	1 2021	Source	Source: CME, ICE



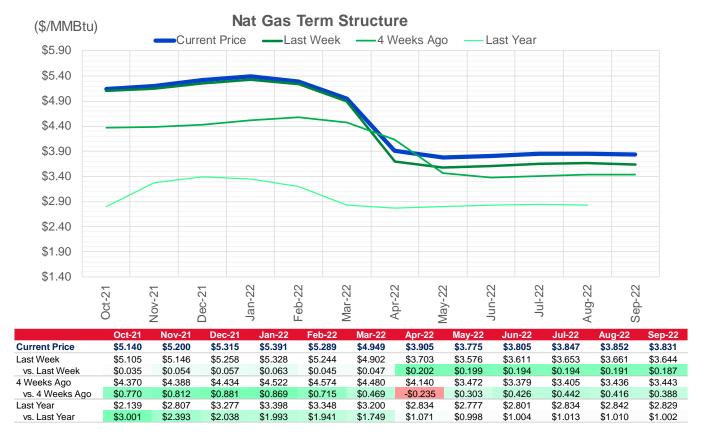
#### Nat Gas Futures Open Interest

CME, and ICE Combined

CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM							
	Current	Prior	Daily Change		Current	Prior	Daily Change
OCT 21	4062	19763	-15701	OCT 21	85873	88636	-2763
NOV 21	274686	277362	-2676	NOV 21	89714	84976	4738
DEC 21	96987	93213	3774	DEC 21	76351	76275	76
JAN 22	159801	163121	-3320	JAN 22	94712	94687	25
FEB 22	57823	58143	-320	FEB 22	70226	69606	620
MAR 22	127206	125222	1984	MAR 22	73838	74024	-186
APR 22	120406	118931	1475	APR 22	72626	72737	-111
MAY 22	121032	117808	3224	MAY 22	70304	69906	398
JUN 22	41090	41308	-218	JUN 22	54237	53989	248
JUL 22	37110	37875	-765	JUL 22	56538	56048	490
AUG 22	32212	32189	23	AUG 22	54942	54768	174
SEP 22	35154	33808	1346	SEP 22	55613	55266	347
OCT 22	90271	87621	2650	OCT 22	61963	61922	41
NOV 22	32425	32320	105	NOV 22	48496	48158	338
DEC 22	26455	26279	176	DEC 22	51800	51434	366
JAN 23	24153	23178	975	JAN 23	38185	37819	366
FEB 23	9905	9497	408	FEB 23	31197	31005	192
MAR 23	13388	12310	1078	MAR 23	32874	32646	228
APR 23	13222	12705	517	APR 23	31409	31167	242
MAY 23	7153	6688	465	MAY 23	30828	30388	440
JUN 23	6130	6114	16	JUN 23	28666	28241	426
JUL 23	4201	4194	7	JUL 23	28867	28426	440
AUG 23	3351	3224	127	AUG 23	28601	28170	432
SEP 23	4487	4608	-121	SEP 23	27942	27509	433
OCT 23	5688	5686	2	OCT 23	30276	29750	526
NOV 23	2232	2224	8	NOV 23	28673	28679	-6
DEC 23	2515	2254	261	DEC 23	27535	27541	-7
JAN 24	1479	1490	-11	JAN 24	15167	15099	68
FEB 24	1080	1078	2	FEB 24	12999	12740	259
MAR 24	3344	3344	0	MAR 24	17487	17394	93







		Cash	Prompt	Cash to	
	Units	Settled	Settle	Prompt	
AGT Citygate	\$/MMBtu	4.65	4.70	0.05	
TETCO M3	\$/MMBtu	4.40	3.82	-0.58	
FGT Zone 3	\$/MMBtu	4.41 5.11		0.70	
Zone 6 NY	\$/MMBtu	4.41	3.65	-0.76	
Chicago Citygate	\$/MMBtu	5.06	4.85	-0.21	
Michcon	\$/MMBtu	5.05	4.78	-0.27	
Columbia TCO Pool	\$/MMBtu	4.54	3.93	-0.61	
Ventura	\$/MMBtu	4.96	4.75	-0.21	
Rockies/Opal	\$/MMBtu	4.73	4.72	-0.01	
El Paso Permian Basin	\$/MMBtu	4.69	4.70	0.01	
Socal Citygate	\$/MMBtu	7.02	7.02 5.89		
Malin	\$/MMBtu	5.40	5.36	-0.04	
Houston Ship Channel	\$/MMBtu	5.20	5.03	-0.17	
Henry Hub Cash	\$/MMBtu	5.02	4.77	-0.25	
AECO Cash	C\$/GJ	2.15 3.18		1.03	
Station2 Cash	C\$/GJ	0.03	5.61	5.58	
Dawn Cash	C\$/GJ	4.99 4.71		-0.28	

Source: CME, Bloomberg



						4 \0/201/2		
					VS	s. 4 Weeks		
	Units	Current Price	VS.	Last Week		Ago	VS	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.089		0.721		1.401		2.065
NatGas Oct21/Nov21	\$/MMBtu	0.025		-0.012	▼	-0.029		-0.028
NatGas Oct21/Jan22	\$/MMBtu	0.204		-0.013		0.010	•	-0.084
NatGas Apr22/Oct22	\$/MMBtu	-0.089		-0.059	•	-0.085	$\blacksquare$	-0.096
WTI Crude	\$/Bbl	75.45		5.160		6.240		34.850
Brent Crude	\$/Bbl	79.53		5.610		6.120		37.100
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	229.60		13.700		15.570		115.650
Propane, Mt. Bel	cents/Gallon	1.28		0.011		0.169		0.788
Ethane, Mt. Bel	cents/Gallon	0.39		0.007		0.054		0.189
Coal, PRB	\$/MTon	12.30		0.000		0.000		0.000
Coal, PRB	\$/MMBtu	0.70						
Coal, ILB	\$/MTon	31.05		0.000		0.000		0.000
Coal, ILB	\$/MMBtu	1.32						



